

CLAIMS

What is claimed is:

1. A near-field optical head objective lens comprising:

a convergent surface, where an incident beam converges to a focal point; and

5 a film, which is formed at the focal point of the convergent surface;

wherein the incident light passes the film and generates the surface plasmon effect on the film surface, and a micro aperture is produced to minimize the diameter of a light spot thus formed.
2. The near-field optical head objective lens of claim 1 used in an optical drive pickup
10 head.
3. The near-field optical head objective lens of claim 2, wherein the data reading and writing of the optical drive is achieved using the pickup head with the near-field optical head objective lens.
4. The near-field optical head objective lens of claim 1, wherein the film contains at
15 least a plurality of interface layers, a mark layer, and a recording layer.
5. The near-field optical head objective lens of claim 4, wherein the material of the interface layer is selected from the group consisting of ZnS-SiO₂, SiN, AlN, and SiO₂.
6. The near-field optical head objective lens of claim 4, wherein the material of the mark layer is selected from the group consisting of AgOx and Sb.
- 20 7. The near-field optical head objective lens of claim 4, wherein the material of the interface layer is ZnS-SiO₂ and the material of the mark layer is AgOx.
8. The near-field optical head objective lens of claim 4, wherein the material of the

interface layer is SiN and the material of the mark layer is Sb.

9. The near-field optical head objective lens of claim 1 further including a convergent lens and a hemispheric lens.

10. The near-field optical head objective lens of claim 1 further including a convergent
5 lens and a super-spherical lens.